

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. XXXI.

May 12, 1871.

No. 7.

WILLIAM LASSELL, Esq., F.R.S., President, in the Chair.

Henry Mann, Esq., Cleckheaton, near Normanton ;
 Clarence Edward Trotter, Esq., 33 Kensington Square ;
 Reginald Bushell, Esq., Hinderton Weston, Cheshire ;
 J. H. Blumm, Esq., H. M. S. Caledonia, Malta,

were balloted for, and duly elected Fellows of the Society.

On the Change in Colour of the Equatorial Belt of Jupiter.
 By John Browning, Esq.

The last number of the *Astronomical Register* contains a report of a discussion on this subject, at the monthly meeting of the Royal Astronomical Society. With the exception of Messrs. Ranyard and Penrose, the whole of the speakers considered that no change had taken place in the colour of the planet.

It was suggested that the reason the colour on the equatorial belt is now seen by many observers, while it was not seen in previous years, is to be accounted for by the fact that within the last few years many observers have become possessed of silvered glass reflectors of large aperture.

With all deference to such admirable observers as the speakers, I would beg to point out that such an explanation will not hold good in my own case.

Five years ago I began making careful coloured drawings of *Jupiter* with a reflector of $10\frac{1}{2}$ inches aperture.

As long since as December 13, 1867, I drew attention to the fact that colour is best seen with small apertures or high powers.

I worked with powers from 350 to 500 whenever the air would permit. Although at that time I saw easily the coppery grey of the dark belts, and the bluish grey of the poles, I could detect no strong colour on the equatorial belt. Yet for the last two years the tawny colour of the equatorial belt has been more conspicuous than either.

It is true that during the last three years I have had a $12\frac{1}{4}$ -inch equatorial reflector, but, owing to unfavourable atmospheric conditions, practically I have seldom indeed used more than 10 inches of aperture.

Several observers have seen the tawny colour of the belt with both refractors and reflectors of only three or four inches aperture.

The exact colour of the equatorial belt may be obtained by allowing a very powerful light to pass through a jet of steam, so that an increase in the luminosity of the body of the planet would completely account for the colour of the belt.

If, as I suspect, the colour appears periodically, we shall have probably to wait several years before we can decide this matter.

Colour observations are, of course, liable to many sources of error, but though observers may at different times receive different impressions from the same colour, I do not think it possible that any one accustomed to the use of colours would mistake yellow ochre for white.

In the case of *Jupiter*, means of comparison were never wanting: the light-belts N. and S. of the equatorial belt having, during the time of the change in the colour of this belt, always appeared nearly white.

I agree with Mr. Penrose that the colour of the equatorial belt appears paler than it did last year, but as the apparent diameter of the planet is smaller, as it is getting low in the heavens, and it now sets in twilight, I do not think much value should be attached to recent observations.

Mr. Ranyard informs me that he has found some observations of Schwabe on the colours of *Jupiter* in addition to the observations he had previously noted in his very interesting and useful paper on this subject published in the *Monthly Notices*.

On a New Spectroscopic Combination. By the Rev. Father Secchi.

(Translation.)

I have the honour to announce the discovery of a new spectroscopic combination by the aid of which it is possible to see the images of the solar spots and protuberances with the spectral rays; the whole in the same visual field. This result is arrived at in two different ways: 1^o, by placing before the object-glass of the telescope a rather large prism, such as that which I use for the spectra of the stars, of six inches aperture; and by letting fall